

To: Wall, Dan[wall.dan@epa.gov]
Cc: 'Lisa Richardson'[lrichard@blm.gov]; Schmittiel, Paula[Schmittiel.Paula@epa.gov]; Way, Steven[way.steven@epa.gov]
From: Peter Butler
Sent: Tue 3/4/2014 9:00:22 PM
Subject: RE: Sippers in the Animas addendum

Dan – I assume that conductance measurements would be taken at or with the sipper at A56 by Arrastra. I'm not a chemist, but I would think that by looking at conductance at Howardsville and just above Arrastra, maybe an estimate of the increase in flow might be made between those locations, provided there is little additional metal loading. That does that seem reasonable?

The conductance measurements would also give us a sense as to metal loading above Howardsville versus below Howardsville.

-Peter

From: Wall, Dan [mailto:wall.dan@epa.gov]
Sent: Monday, March 03, 2014 2:18 PM
To: Peter Butler
Cc: 'Lisa Richardson'; Schmittiel, Paula; Way, Steven
Subject: RE: Sippers in the Animas addendum

Hi Peter

It's not that EPA doesn't believe there is loading upstream – I think the data pretty clearly support that- but rather, we (actually USGS) don't have the mini sippers to deploy at additional locations right now. Thomas Chapin is putting out 7 mini-sippers this Spring and this his biggest mini-sipper deployment yet. He has ordered parts and is building them from scratch

Another idea though. As expected, we see a pretty strong correlation of metals concentrations and specific conductance. Thomas is also deploying 10 conductivity loggers. We could put one up at the Howardville gage. It would not be a quantitative metals value but may give a sense of the timing of metals loading relative to flow. It would be useful information if EPA starts evaluating upstream sources in the future.

Would you be interested in this?

From: Peter Butler [<mailto:butlerpeter2@gmail.com>]
Sent: Sunday, March 02, 2014 9:22 PM
To: Wall, Dan
Cc: 'Lisa Richardson'; Schmittiel, Paula; Way, Steven
Subject: FW: Sippers in the Animas addendum

Dan – I forgot all about Boulder Gulch. That could be a significant contributor of flow in April. So maybe the Howardville gage gives a pretty good flow approximation for A56.

Peter Butler

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From: Peter Butler [<mailto:butlerpeter2@gmail.com>]
Sent: Sunday, March 02, 2014 8:12 PM
To: 'Wall, Dan'
Cc: 'Lisa Richardson'; 'Schmittiel, Paula'; 'Way, Steven'
Subject: RE: Sippers in the Animas

Dan – I realize that a lot of people think that most of the loading above Silverton on the Animas comes from the reach between Arrastra and A68. However, by having a sipper at A56, you won't be able to calculate loads because there are no flow measurements. One might think that the flow at the Howardsville gage could be a good approximation, but comparing gage data at Howardsville versus A68, I found that in some years the flow can increase by more than 100% between those two gages in April. This is very surprising because the only named tributary is Arrastra which is north facing and unlikely to have much flow in April. Without the loads it is difficult to calculate how any potential load reductions in this stretch might improve water quality downstream. You might think some more about if a sipper at the Howardville gage might give us more useful information.

Attached is a spreadsheet comparing the April flows at the two gages. It also includes our April data for zinc, cadmium, and manganese for which the annual peak concentrations are April at A68. Cadmium concentrations are around the acute table value standard. I have not been able to identify any pattern between high metal concentrations and different flow regimes at the gages. I also briefly compared flows at the two gages during May through October. It doesn't appear that flow increases by more than 50% between Howardsville and A68 during those months.

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From: Wall, Dan [<mailto:wall.dan@epa.gov>]
Sent: Tuesday, February 25, 2014 10:59 AM
To: Peter Butler
Cc: Lisa Richardson; Schmittiel, Paula; Way, Steven
Subject: RE: Sippers in the Animas

Hi Peter

We will be placing a mini-sipper just above Arastra at A56, A68 and A72 (plus some canyon stations). This should capture influences above Silverton.

From: Peter Butler [<mailto:butlerpeter2@gmail.com>]
Sent: Friday, February 21, 2014 2:01 PM
To: Wall, Dan
Cc: Lisa Richardson
Subject: Sippers in the Animas

Dan – I understand you are planning to place some sippers in the Animas Watershed this spring. If you are going to place one at A68 in Silverton, we'd like to request one at the Howardsville gage farther upstream. Almost every year we see high concentrations of zinc, manganese and cadmium at A68 in April. The cadmium is up around the acute standard. See the graphs in the attached spreadsheet. Most of us believe the sources are between Howardsville and Silverton during snowmelt on the south-facing slopes. We'd like to see if that's true and then look more closely for the source.

Peter Butler

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